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ART UNIT

PAPER NUMBER

2724

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/909,966

Applicant(s)
Yuichi Higuchi

Examiner
Douglas Q. Tran

Group Art Unit
2724

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-3, 5-7, 9-12, 14-16, 18-25, 27-33, 35-41, 43-47, and 49-54 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-3, 5-7, 9-12, 14-16, 18-25, 27-33, 35-41, 43-47, and 49-54 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11/1/99

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1, 3, 5, 10, 12, 14, 19 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Villalpando (U.S. Patent No. 5,740,368).

As to claim 1, Villalpando teaches:

- determination means (note 201 in 115 of fig. 2) for determining based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45 and 56);

- informing means (note 203 in fig. 2) for supplying information indicating that a power supply is scheduled to be turned off to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition corresponds to the power-off notice,

wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

As to claim 3, Villalpando teaches:

- the host apparatus is connected via a communication network, and informing means supplies the information to all host apparatus connected (col. 5, lines 53-60).

As to claim 5, Villalpando teaches:

- the determination means (note 201 in fig. 2) acquires the contents of the new condition using the condition acquisition means, and determines if the contents indicate a power off notice signal.

As to claim 10, Villalpando teaches steps:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45 and 56);

- supplying information (note 203 in fig. 2) indicating that a power supply is scheduled to be turned off to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when

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the determination apparatus determines that the new condition corresponds to the power-off notice,

wherein determining step includes receiving(i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67)a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

As to claim 12, Villalpando teaches:

- the host apparatus is connected via a communication network, and informing means supplies the information to all host apparatus connected (col. 5, lines 53-60).

As to claim 14, Villalpando teaches:

- acquiring (note 201 in fig. 2) the contents of the new condition using the condition acquisition means, and determines if the contents indicate a power off notice signal.

As to claim 19, Villalpando teaches the instruction for performing steps:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45 and 56);

- supplying information (note 203 in fig. 2) indicating that a power supply is scheduled to be turned off to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition corresponds to the power-off notice,

wherein determining step includes receiving(i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67)a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

As to claim 51, Villalpando teaches the instruction for performing steps:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45 and 56);

- supplying information (note 203 in fig. 2) indicating that a power supply is scheduled to be turned off to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition corresponds to the power-off notice,

wherein determining step includes receiving(i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67)a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 21, 27-29, 35-37 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villalpando (U.S. Patent No. 5,740,368) in view of Sung (U.S. Patent No. 5,700,003).

As to claim 21, Villalpando teaches:

- determination means (note 201 in 115 of fig. 2) for determining based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45);

- informing means (note 203 in fig. 2) for supplying information indicating that new condition to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition,

wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not teach a new condition corresponds to a change in remaining paper quantity which determined by determination means and informed by informing means to the host apparatus.

Sung teaches:

- determination means (i.e., remaining amount of paper sensing unit 6 in fig. 2) for determining based on a signal indicating that a condition of the printing apparatus has changed if the change in condition corresponds to a change in remaining paper quantity (col. 5, lines 24-26);

- informing means (i.e., paper thickness input unit 5 in fig. 2) for informing the host apparatus of the change in remaining paper quantity when the determination means determines that the change in condition corresponds to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be

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obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 27, Villalpando teaches the features in claim 21 except condition acquisition means.

the determination means determines if contents of the change in condition acquired by acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal.

However, Villalpando does not explicitly teaches the determination means determines if the contents of the change in condition correspond to the change in remaining paper quantity.

Sung teaches:

- the determination means (i.e., remaining amount of paper sensing unit 6 in fig. 2) determines if the contents of the change in condition correspond to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 28, Villalpando teaches the features in claim 21 except determining an actual remaining paper quantity.

Sung teaches:

- when the determination means (i.e., remaining amount of paper sensing unit 6 in fig. 2) determines that the change in condition corresponds to the change in remaining paper quantity, the determination means also determines an actual remaining paper quantity (col. 5, line 59 through col. 6, line 4), and the informing means (i.e., paper thickness input unit 5 in fig. 2) informs the host apparatus of the actual remaining paper quantity.

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

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As to claim 29, Sung teaches steps:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45);

- supplying information (note 203 in fig. 2) indicating that new condition to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition,

wherein the determination step includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not teach a new condition corresponds to a change in remaining paper quantity which determined by determination means and informed by informing means to the host apparatus.

Sung teaches:

- determining (i.e., remaining amount of paper sensing unit 6 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if the change in condition corresponds to a change in remaining paper quantity (col. 5, lines 24-26);

- informing (i.e., paper thickness input unit 5 in fig. 2) the host apparatus of the change in remaining paper quantity when the determination means determines that the change in condition corresponds to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 35, Villalpando teaches the features in claim 29 except condition acquisition means.

determining if contents of the change in condition acquired by acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal.

However, Villalpando does not explicitly teaches the determination means determines if the contents of the change in condition correspond to the change in remaining paper quantity.

Sung teaches:

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- determining (i.e., remaining amount of paper sensing unit 6 in fig. 2) if the contents of the change in condition correspond to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 36, Villalpando teaches the features in claim 29 except determining an actual remaining paper quantity.

Sung teaches:

- when determining (i.e., remaining amount of paper sensing unit 6 in fig. 2) that the change in condition corresponds to the change in remaining paper quantity, the determination means also determines an actual remaining paper quantity (col. 5, line 59 through col. 6, line 4), and the informing means (i.e., paper thickness input unit 5 in fig. 2) informs the host apparatus of the actual remaining paper quantity.

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 37, Sung teaches a program for instructing the step:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45);

- supplying information (note 203 in fig. 2) indicating that new condition to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition,

wherein the determination step includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note

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201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not teach a new condition corresponds to a change in remaining paper quantity which determined by determination means and informed by informing means to the host apparatus.

Sung teaches:

- determining (i.e., remaining amount of paper sensing unit 6 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if the change in condition corresponds to a change in remaining paper quantity (col. 5, lines 24-26);
- informing (i.e., paper thickness input unit 5 in fig. 2) the host apparatus of the change in remaining paper quantity when the determination means determines that the change in condition corresponds to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 53, Sung teaches a program for instructing the step:

- determining (note 201 in 115 of fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32, 42-45);
- supplying information (note 203 in fig. 2) indicating that new condition to the host apparatus (i.e., LAN 211 in fig. 2 discussed in col. 4, lines 37-39) when the determination apparatus determines that the new condition,

wherein the determination step includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not teach a new condition corresponds to a change in remaining paper quantity which determined by determination means and informed by informing means to the host apparatus.

Sung teaches:

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- determining (i.e., remaining amount of paper sensing unit 6 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if the change in condition corresponds to a change in remaining paper quantity (col. 5, lines 24-26);
- informing (i.e., paper thickness input unit 5 in fig. 2) the host apparatus of the change in remaining paper quantity when the determination means determines that the change in condition corresponds to the change in remaining paper quantity (col. 5, lines 31-33).

Since Villalpando and Sung are both directed toward printing devices using a determination means for determining status of printing apparatus, the purpose of using a determination means for determining status of printing apparatus would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sung, to have modified a controller of the status of printing devices of Kim et al. The suggestion for modifying the determinator for determining the status of printing device in the host of Villalpando would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

5. Claims 2, 6-7, 9, 11, 15-16, 18, 20 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villalpando (U.S. Patent No. 5,740,368) in view of Bender et al. (U.S. Patent No. 5,791,790).

As to claim 2, Villalpando teaches the features of claim 1 except for holding a condition of the print job including information of an incomplete job.

Bender et al. teach:

- condition holding means (i.e., non-volatile memory discussed in col. 8, lines 22-30) for holding a condition of the print job received from the host apparatus, and wherein the information supplied from the informing means (note NPAP 50 in fig. 2) includes information of an incomplete job held by the condition holding means (col. 4, lines 46-60).

Since Villalpando and Bender are both directed toward printing devices using condition holding means, the purpose of using condition holding means for holding a condition of the print job from the host apparatus would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means in the status of print job in Villalpando. The suggestion for modifying the status of printing controller including memory of Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 11, Villalpando teaches the features of claim 10 except for holding a condition of the print job including information of an incomplete job.

Bender et al. teach:

- holding (i.e., non-volatile memory discussed in col. 8, lines 22-30) a condition of the print job received from the host apparatus, and wherein the information supplied from the

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informing means (note NPAP 50 in fig. 2) includes information of an incomplete job held by the condition holding means (col. 4, lines 46-60).

Since Villalpando and Bender are both directed toward printing devices using condition holding means, the purpose of using condition holding means for holding a condition of the print job from the host apparatus would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means in the status of print job in Villalpando. The suggestion for modifying the status of printing controller including memory of Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 6, Villalpando teaches:

- determination means (note 201 in fig. 2) for determining based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32 and 56).

wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not explicitly teach nonvolatile storage medium and informing means for informing when the power supply is turned on.

Bender et al. teach:

- storage means for storing a condition of the print job from the host apparatus in a nonvolatile storage medium when the determination means determines that the new condition corresponds to a power-off notice condition (col. 4, lines 46-52);

- informing means (i.e., NPAP Task 50 in fig. 2) for, when the power supply is turned on, supplying information of an incomplete print job to the host apparatus on the basis of the print job condition stored by the storage means (col. 4, lines 53-60).

Since Villalpando and Bender are both directed toward printing devices using a memory and informing means, the purpose of using memory for holding a condition of the print job from the host apparatus and supplying information of an incomplete print job to the host when the power supply is turned on which would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means and informer in the status of printing controller in Villalpando. The suggestion for modifying the memory and informer of Sung would be obvious because such a

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modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 7, Villalpando teaches the features with motivation in claim 6, and:

- the host apparatus is connected via a communication network, and informing means supplies the information to all host apparatus connected (col. 5, lines 53-60).

As to claim 9, Villalpando teaches the features with motivation in claim 6, and:

- the determination means (note 201 in fig. 2) acquires the contents of the new condition using the condition acquisition means, and determines if the contents indicate a power off notice signal.

As to claims 15, Villalpando teaches steps:

- determining (note 201 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32 and 56).

wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not explicitly teach nonvolatile storage medium and informing means for informing when the power supply is turned on.

Bender et al. teach:

- storing a condition of the print job from the host apparatus in a nonvolatile storage medium when the determination means determines that the new condition corresponds to a power-off notice condition (col. 4, lines 46-52);
- informing (i.e., NPAP Task 50 in fig. 2), when the power supply is turned on, supplying information of an incomplete print job to the host apparatus on the basis of the print job condition stored by the storage means (col. 4, lines 53-60).

Since Villalpando and Bender are both directed toward printing devices using a memory and informing means, the purpose of using memory for holding a condition of the print job from the host apparatus and supplying information of an incomplete print job to the host when the power supply is turned on which would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means and informer in the status of printing controller in Villalpando. The suggestion for modifying the memory and informer of Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 16, Villalpando teaches the features with motivation in claim 15, and:

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- the host apparatus is connected via a communication network, and informing means supplies the information to all host apparatus connected (col. 5, lines 53-60).

As to claim 18, Villalpando teaches the features with motivation in claim 15, and:

- the determination means (note 201 in fig. 2) acquires the contents of the new condition using the condition acquisition means, and determines if the contents indicate a power off notice signal.

As to claim 20, Villalpando teaches the program for instructing the steps:

- determining (note 201 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32 and 56).

wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not explicitly teach nonvolatile storage medium and informing means for informing when the power supply is turned on.

Bender et al. teach:

- storing a condition of the print job from the host apparatus in a nonvolatile storage medium when the determination means determines that the new condition corresponds to a power-off notice condition (col. 4, lines 46-52);

- informing (i.e., NPAP Task 50 in fig. 2), when the power supply is turned on, supplying information of an incomplete print job to the host apparatus on the basis of the print job condition stored by the storage means (col. 4, lines 53-60).

Since Villalpando and Bender are both directed toward printing devices using a memory and informing means, the purpose of using memory for holding a condition of the print job from the host apparatus and supplying information of an incomplete print job to the host when the power supply is turned on which would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means and informer in the status of printing controller in Villalpando. The suggestion for modifying the memory and informer of Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 52, Villalpando teaches the program for instructing the steps:

- determining (note 201 in fig. 2) based on a signal indicating that a condition of the printing apparatus has changed if a new condition corresponds to a power-off notice (col. 4, lines 31-32 and 56).

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wherein the determination means includes reception means (i.e., 209 in fig. 2 and shared memory 1115 in fig. 11 discussed in col. 4, lines 66-67) for receiving a condition change signal indicating that a condition of an engine unit has changed, and condition acquisition means (note 201 in fig. 2 discussed in col. 4, line 66 through col. 5, line 7) for acquiring contents of a new condition upon reception of the condition change signal from the engine unit.

However, Villalpando does not explicitly teach nonvolatile storage medium and informing means for informing when the power supply is turned on.

Bender et al. teach:

- storing a condition of the print job from the host apparatus in a nonvolatile storage medium when the determination means determines that the new condition corresponds to a power-off notice condition (col. 4, lines 46-52);
- informing (i.e., NPAP Task 50 in fig. 2), when the power supply is turned on, supplying information of an incomplete print job to the host apparatus on the basis of the print job condition stored by the storage means (col. 4, lines 53-60).

Since Villalpando and Bender are both directed toward printing devices using a memory and informing means, the purpose of using memory for holding a condition of the print job from the host apparatus and supplying information of an incomplete print job to the host when the power supply is turned on which would have been recognized by Villalpando as set forth by Bender et al.

It would have been obvious to one of ordinary skill in the art, in view of Bender et al., to have modified the storage means and informer in the status of printing controller in Villalpando. The suggestion for modifying the memory and informer of Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

6. Claims 22-25, 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Villalpando (U.S. Patent No. 5,740,368) in view of Sung (U.S. Patent No. 5,700,003) as applied to claims 21 and 29 above, and further in view of Sugiyama et al. (U.S. Patent No. 5,859,956).

As to claim 22, Sung teaches the features including the change in remaining paper quantity with motivation in claim 21 as indicated above except means informs all host apparatus, registration means and designation means.

Sugiyama et al. teach:

informing means (i.e., server 8004 in fig. 75) informs all host apparatus (note 8001 and 8002 in fig. 75) connected of the condition change.

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using informing means, the purpose of using informing means would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to informing means of the combination of Villalpando and Sung. The suggestion for modifying informing means of the combination of Villalpando and Sung would be obvious

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because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 23, Sung teaches the features including the change in remaining paper quantity with motivation in claim 21 as indicated above except registration means.

Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, and wherein the informing means (i.e., server 8004 in fig. 75) informs host apparatuses as transmission sources of the print jobs which are registered in the registration means of the condition change.

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 24, Sung teaches the features including the change in remaining paper quantity with motivation in claim 21 as indicated above except registration means.

Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, wherein the informing means (i.e., server 8004 in fig. 75) informs host apparatuses as transmission sources of the print jobs and corresponding to data which is being printed among the print jobs registered in the registration means of the condition change (col. 69, lines 58-59 and col. 70, lines 23-27).

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 25, Sung teaches the features including the change in remaining paper quantity with motivation in claim 21 as indicated above except registration means.

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Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, and designation means for designating a destination of the informing means, and wherein the informing means informs, in according with the designation by the designation means, all host apparatuses connected, host apparatuses as transmission sources of the print jobs registered in the registration means, or a host apparatus as a transmission source of the print job corresponding to data which is being printed among the print jobs registered in the registration means, of the condition change (col. 70, lines 22-27).

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 30, Sung teaches the features including the change in remaining paper quantity with motivation in claim 29 as indicated above except means informs all host apparatus, registration means and designation means.

Sugiyama et al. teach:

informing means (i.e., server 8004 in fig. 75) informs all host apparatus (note 8001 and 8002 in fig. 75) connected of the condition change.

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using informing means, the purpose of using informing means would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to informing means of the combination of Villalpando and Sung. The suggestion for modifying informing means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 31, Sung teaches the features including the change in remaining paper quantity with motivation in claim 29 as indicated above except registration means.

Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, and wherein the informing means (i.e., server 8004 in fig. 75) informs host

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apparatuses as transmission sources of the print jobs which are registered in the registration means of the condition change.

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 32, Sung teaches the features including the change in remaining paper quantity with motivation in claim 29 as indicated above except registration means.

Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, wherein the informing means (i.e., server 8004 in fig. 75) informs host apparatuses as transmission sources of the print jobs and corresponding to data which is being printed among the print jobs registered in the registration means of the condition change (col. 69, lines 58-59 and col. 70, lines 23-27).

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 33, Sung teaches the features including the change in remaining paper quantity with motivation in claim 29 as indicated above except registration means.

Sugiyama et al. teach:

registration means (table ETAB in fig. 76 discussed in col. 68, lines 46-47 and 59-60) for registering print jobs which were sent from the host apparatus and processing of which has not been completed yet, and designation means for designating a destination of the informing means, and wherein the informing means informs, in accordance with the designation by the designation means, all host apparatuses connected, host apparatuses as transmission sources of the print jobs registered in the registration means, or a host apparatus as a transmission source of the print job

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corresponding to data which is being printed among the print jobs registered in the registration means, of the condition change (col. 70, lines 22-27).

Since the combination of Villalpando and Sung and Sugiyama are both directed toward printing devices using registration means, the purpose of using registration means for registering the print jobs would have been recognized by the combination of Villalpando and Sung as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to registration means of the combination of Villalpando and Sung. The suggestion for modifying registration means of the combination of Villalpando and Sung would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

7. Claims 38-41, 43-47 and 49-50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,812,745) in view of Sugiyama et al. (U.S. Patent No. 5,859,956).

As to claim 38, Kim et al. teach:

- determination means (i.e., video controller 30 in fig. 1) for determining, based on a signal indicating that a condition has changed, an item of the condition change (in table 1 in col. 3);

- discrimination means (i.e., video controller 30 in fig. 1 discussed in col. 2, lines 59-65) for discriminating with reference to the items stored in the storage means if the item determined by the determination means corresponds to one of the items stored in the storage means (in table 1 in col. 3 or memory in col. 2, lines 62-64);

- informing means (i.e., video controller 30 in fig. 1 discussed in col. 4, lines 3-5) for informing the host apparatus that designated the item of the condition change item determined to correspond to the stored item by the discrimination means.

wherein determination means (i.e., an engine controller 20 in fig. 1 discussed in col. 2, lines 52-55) includes reception means (i.e., memory discussed in col. 2, lines 61-65) for receiving a condition change signal indicating that a condition of the engine unit has changed, and condition acquisition means (i.e., video controller 30 in fig. 1 discussed in col. 2, lines 59-61) for acquiring contents of the change in condition upon reception of the condition change signal of the engine unit.

However, Sugiyama et al. do not explicitly teach storage means for storing condition change items designated by the host apparatus.

Sugiyama et al. teach:

- storage means (i.e., table ETAB in fig. 76 discussed in col. 68, lines 46-47) for storing condition change items designated by the host apparatus (i.e., the server 8004 in fig. 75).

Since Kim and Sugiyama are both directed toward printing devices using status of printing controller, the purpose of using storing means for storing the status of printing devices would have been recognized by Kim et al. as set forth by Sugiyama et al.

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It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the storing means of storing the status of printing device in the host of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 39, Kim et al. teaches the features in claim 38 except storing the condition change items in units of types of host apparatus.

Sugiyama et al. teach:

- storage means (i.e., tables in fig. 53, fig. 70 and fig. 76) stores the condition change items in units of types of host apparatuses (fig. 69 and fig. 75), the discrimination means refers to the condition change items stored in the storage means in units of types of host apparatus, and the informing means informs the host apparatus of the condition change in units of types of host apparatus.

Since Kim and Sugiyama are both directed toward printing devices using status of printing controller, the purpose of using storing means for storing the condition change items in units of types of host apparatuses would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 40, Kim et al. teaches the features in claim 38 except reception means and storage means.

Sugiyama et al. teach:

- reception means (i.e., table ETAB in fig. 76) for receiving designations of the condition change items (col. 69, lines 59-61) from the host apparatus (i.e., server 8004 in fig. 75), and wherein the storage means (col. 68, lines 46-47) stores the condition change items received by the storage means in units of types of host apparatus (col. 70, lines 22-29).

Since Kim and Sugiyama are both directed toward printing devices using storing means, the purpose of using storing means for storing the condition change items in units of types of host apparatuses would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 41, the combination of Sugiyama et al. and Kim et al. teaches:

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Although neither Sugiyama et al. nor Kim et al. explicitly show the types of host apparatuses include a supervisor who supervises a system including the host apparatus and the printing apparatus, and a normal user other than the supervisor, the printing system of Sugiyama et al. teaches the types of host apparatuses (fig. 69, fig. 75) which can include a supervisor of host apparatus in order to the status of printer of Kim et al. in second portion of table 1 (in col.3 discussed lines 24-25) is informed the supervisor of host apparatus and a first portion of table is informed to a normal user of host apparatus.

It would have been obvious to one of ordinary skill in the art to have modified the printing system of the combination of Kim and Sugiyama in order to have the types of host apparatus including a supervisor who supervises a system including the host apparatus and the printing apparatus. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 43, Kim et al. teach the features with the motivation in claim 38, and:

- determination means (i.e., an video controller 30 in fig. 1 discussed in col. 2, lines 59-64) determines if the contents of the change in condition acquired by the condition acquisition means correspond to one of the items designated by the host apparatus.

As to claim 44, Kim et al. teaches the steps:

- determining, based on a signal indicating that a condition has changed, an item of the condition change (in table 1 in col. 3);

- discriminating with reference to the items stored in the storage means if the item determined by the determination means corresponds to one of the items stored in the storage means (in table 1 in col. 3 or memory in col. 2, lines 62-64);

- informing the host apparatus that designated the item of the condition change item determined to correspond to the stored item by the discrimination means.

wherein determination means (i.e., an engine controller 20 in fig. 1 discussed in col. 2, lines 52-55) includes reception means (i.e., memory discussed in col. 2, lines 61-65) for receiving a condition change signal indicating that a condition of the engine unit has changed, and condition acquisition means (i.e., video controller 30 in fig. 1 discussed in col. 2, lines 59-61) for acquiring contents of the change in condition upon reception of the condition change signal of the engine unit.

However, Sugiyama et al. do not explicitly teach storage means for storing condition change items designated by the host apparatus.

Sugiyama et al. teach:

- storing (i.e., table ETAB in fig. 76 discussed in col. 68, lines 46-47) condition change items designated by the host apparatus (i.e., the server 8004 in fig. 75).

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Since Kim and Sugiyama are both directed toward printing devices using storing means, the purpose of using storing means for storing the status of printing devices would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the storing means of storing the status of printing device in the host of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 45, Kim et al. teaches the features in claim 38 except storing the condition change items in units of types of host apparatus.

Sugiyama et al. teach:

- storing (i.e., tables in fig. 53, fig. 70 and fig. 76) the condition change items in units of types of host apparatuses (fig. 69 and fig. 75), the discrimination means refers to the condition change items stored in the storage means in units of types of host apparatus, and the informing means informs the host apparatus of the condition change in units of types of host apparatus.

Since Kim and Sugiyama are both directed toward printing devices using status of printing controller, the purpose of using storing means for storing the condition change items in units of types of host apparatuses would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 46, Kim et al. teaches the features in claim 38 except reception means and storage means.

Sugiyama et al. teach:

- receiving (i.e., table ETAB in fig. 76) designations of the condition change items (col. 69, lines 59-61) from the host apparatus (i.e., server 8004 in fig. 75), and wherein the storage means (col. 68, lines 46-47) stores the condition change items received by the storage means in units of types of host apparatus (col. 70, lines 22-29).

Since Kim and Sugiyama are both directed toward printing devices using storing means, the purpose of using storing means for storing the condition change items in units of types of host apparatuses would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

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As to claim 47, the combination of Sugiyama et al. and Kim et al. teaches:

Although neither Sugiyama et al. nor Kim et al. explicitly show the types of host apparatuses include a supervisor who supervises a system including the host apparatus and the printing apparatus, and a normal user other than the supervisor, the printing system of Sugiyama et al. teaches the types of host apparatuses (fig. 69, fig. 75) which can include a supervisor of host apparatus in order to the status of printer of Kim et al. in second portion of table 1 (in col.3 discussed lines 24-25) is informed the supervisor of host apparatus and a first portion of table is informed to a normal user of host apparatus.

It would have been obvious to one of ordinary skill in the art to have modified the printing system of the combination of Kim and Sugiyama in order to have the types of host apparatus including a supervisor who supervises a system including the host apparatus and the printing apparatus. The suggestion for modifying the condition change items in units of types of host apparatuses of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 49, Kim et al. teach the features with the motivation in claim 38, and:

- determines (i.e., an video controller 30 in fig. 1 discussed in col. 2, lines 59-64) if the contents of the change in condition acquired by the condition acquisition means correspond to one of the items designated by the host apparatus.

As to claim 50, Kim et al. teaches the program for instructing:

- determining, based on a signal indicating that a condition has changed, an item of the condition change (in table 1 in col. 3);

- discriminating with reference to the items stored in the storage means if the item determined by the determination means corresponds to one of the items stored in the storage means (in table 1 in col. 3 or memory in col. 2, lines 62-64);

- informing the host apparatus that designated the item of the condition change item determined to correspond to the stored item by the discrimination means.

wherein determination means (i.e., an engine controller 20 in fig. 1 discussed in col. 2, lines 52-55) includes reception means (i.e., memory discussed in col. 2, lines 61-65) for receiving a condition change signal indicating that a condition of the engine unit has changed, and condition acquisition means (i.e., video controller 30 in fig. 1 discussed in col. 2, lines 59-61) for acquiring contents of the change in condition upon reception of the condition change signal of the engine unit.

However, Sugiyama et al. do not explicitly teach storage means for storing condition change items designated by the host apparatus.

Sugiyama et al. teach:

- storing (i.e., table ETAB in fig. 76 discussed in col. 68, lines 46-47) condition change items designated by the host apparatus (i.e., the server 8004 in fig. 75).

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Since Kim and Sugiyama are both directed toward printing devices using storing means, the purpose of using storing means for storing the status of printing devices would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the storing means of storing the status of printing device in the host of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

As to claim 54, Kim et al. teaches the program for instructing:

- determining, based on a signal indicating that a condition has changed, an item of the condition change (in table 1 in col. 3);
- discriminating with reference to the items stored in the storage means if the item determined by the determination means corresponds to one of the items stored in the storage means (in table 1 in col. 3 or memory in col. 2, lines 62-64);
- informing the host apparatus that designated the item of the condition change item determined to correspond to the stored item by the discrimination means.

wherein determination means (i.e., an engine controller 20 in fig. 1 discussed in col. 2, lines 52-55) includes reception means (i.e., memory discussed in col. 2, lines 61-65) for receiving a condition change signal indicating that a condition of the engine unit has changed, and condition acquisition means (i.e., video controller 30 in fig. 1 discussed in col. 2, lines 59-61) for acquiring contents of the change in condition upon reception of the condition change signal of the engine unit.

However, Sugiyama et al. do not explicitly teach storage means for storing condition change items designated by the host apparatus.

Sugiyama et al. teach:

- storing (i.e., table ETAB in fig. 76 discussed in col. 68, lines 46-47) condition change items designated by the host apparatus (i.e., the server 8004 in fig. 75).

Since Kim and Sugiyama are both directed toward printing devices using storing means, the purpose of using storing means for storing the status of printing devices would have been recognized by Kim et al. as set forth by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art, in view of Sugiyama et al., to have modified to storing means for storing the status of printing devices of Kim et al. The suggestion for modifying the storing means of storing the status of printing device in the host of Kim et al. would be obvious because such a modification would improve the capability and efficiency of the system for communication activities between the host and the printer.

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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Q. Tran whose telephone number is (703) 305-4857 or e-mail address is Douglas.tran@uspto.gov.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Douglas Q. Tran
Jan. 15, 2000

A handwritten signature in black ink, appearing to read "David K. Moore", with a stylized, flowing script.

DAVID K. MOORE
SUPERVISORY PATENT EXAMINER
GROUP 2700